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The James Webb Space Telescope: Science and Mission Status

Abstract

The James Webb Space Telescope (JWST) is a large aperture, cryogenic, infrared-optimized space observatory under construction by NASA for launch later this decade. The European and Canadian Space Agencies are mission partners. JWST will find and study the first galaxies that formed in the early universe and peer through dusty clouds to see star and planet formation at high spatial resolution. The breakthrough capabilities of JWST will enable new studies of star formation and evolution in the Milky Way, including the Galactic Center, nearby galaxies, and the early universe. JWST will have a segmented primary mirror, approximately 6.5 meters in diameter, and will be diffraction-limited at 2 microns. The JWST observatory will be placed in a L2 orbit by an Ariane 5 launch vehicle provided by ESA. The observatory is designed for a 5-year prime science mission, with consumables for 10 years of science operations.